Application No.: 10/774650
Amendment dated: February 15, 2007
Reply to Office action of December 13, 2006

AMENDMENTS TO THE CLAIMS:

    This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

    1(currently amended).   A roller chain transmission <u>in the timing draive of an automobile engine, the transmission</u> comprising <u>a toothed driving sprocket on a crankshaft of the engine, at least one toothed driven sprocket on a camshaft of the engine, and</u> a roller chain having interleaved pairs of inner and outer plates, cylindrical bushings fixed to bushing holes in the inner plates, pins rotatable in said bushings and fixed to pin holes in the outer plates, rollers rotatable on said bushings, ~~and a toothed sprocket~~ <u>said toothed sprockegts</u> meshing with the roller chain,

    wherein the ~~an~~ outer diameter D of the rollers, the outer
        diameter d of the pins and the height H of the inner
        plates ~~satisfies~~ <u>satisfy</u> the following relationships
        with respect to the pitch P of the roller chain:
            0.72P ≤ D ≤ 0.79P
            0.40P ≤ d ≤ 0.44P
            0.96P ≤ H
and
    wherein the teeth of ~~the sprocket~~ <u>at least one of said
        sprockets</u> have <u>an arc-shaped tooth gap bottom having
        a radius R1,</u> an asymmetric shape ~~in~~ <u>on</u> the chain
        entering side and the chain leaving side with

respect to a tooth center line, and, if ~~a radius of an arc of the tooth gap bottom is defined as R1,~~ the chain entering side tooth flank radius is defined as R2, and the radius of an arc of the chain entering side of the tooth head portion is defined as R3, the sprocket satisfies the following relationships:

$$0.505D \leq R1 \leq 0.505D + 0.069\sqrt[3]{D}$$

$$P - (0.505D + 0.069\sqrt[3]{D}) \leq R2 \leq P - 0.505\sqrt[3]{D}$$

$$0.08 \leq R3 \leq 0.13P$$

<u>where R1, R2, R3, D, and P are measured in millimeters</u>.